

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A system for controlling an output of an electrosurgical generator comprising:

a drive circuit for generating an output, the output being responsive to a feedback signal and operatively coupled to at least one electrode of the electrosurgical generator;

at least one sensing circuit operatively coupled to the at least one electrode for generating ~~at least one~~ a first signal, ~~the at least one signal~~ corresponding to a value of a voltage waveform present on the at least one electrode and a second signal corresponding to a value of a current waveform present on the at least one electrode;

a processing circuit for receiving the ~~at least one~~ first and second signals, wherein the processing circuit implements the Goertzel algorithm for determining a phase of each of the voltage waveform and the current waveform ~~including associated circuitry for determining a value of the at least one signal~~;

a determining circuit in communication with the processing circuit for generating an output signal as a function of a phase difference between the voltage waveform and the current waveform, ~~the output signal being representative of the value of the at least one signal~~; and

a control circuit for generating a feedback signal, the feedback signal representative

of a difference between a value of the output signal and a reference value, the feedback signal operatively coupled to the drive circuit.

2. The system of claim 1, wherein the processing circuit includes at least one digital signal processor.

3. (Canceled).

4. (Canceled).

5. (Currently amended) The system of claim [[4]] 1, wherein the phase difference is used to compensate for energy delivery at the operating site.

6. (Currently amended) The system of claim [[4]] 1, wherein the phase difference provides feedback to the generator about tissue relating to at least one of: tissue change over time, tissue impedance, tissue type, tissue cycle completion.

7. (Original) The system of claim 1, wherein the at least one sensing circuit includes a voltage sensing circuit and/or a current sensing circuit.

8. (New) A system for controlling an output of an electrosurgical generator comprising: a drive circuit for generating an output, the output being responsive to a feedback

signal from at least one electrode operatively coupled to the electrosurgical generator;

at least one sensing circuit operatively coupled to the at least one electrode that generates a first signal corresponding to a value of a voltage waveform present on the at least one electrode and a second signal corresponding to a value of a current waveform present on the at least one electrode;

a processing circuit that receives the first and second signals, wherein the processing circuit implements the Goertzel algorithm for determining a phase of each of the voltage waveform and the current waveform; and

a determining circuit in communication with the processing circuit that generates an output signal as a function of a phase difference between the voltage waveform and the current waveform.

9. (New) The system of claim 8, further comprising:

a control circuit that generates a feedback signal, the feedback signal representative of a difference between a value of the output signal and a reference value, the feedback signal operatively coupled to the drive circuit.

10. (New) The system of claim 8, wherein the processing circuit includes at least one digital signal processor.

11. (New) The system of claim 8, wherein the phase difference is used to compensate for energy delivery at the operating site.

12. (New) The system of claim 8, wherein the phase difference provides feedback to the generator relating to at least one of: tissue change over time, tissue impedance, tissue type and tissue cycle completion.
13. (New) The system of claim 8, wherein the at least one sensing circuit includes at least one of a voltage sensing circuit and a current sensing circuit.
14. (New) A method for controlling an output of an electrosurgical generator comprising the step of:
generating an output through at least one electrode operatively coupled to the electrosurgical generator, the output being responsive to a feedback signal;
generating a first signal corresponding to a value of a voltage waveform present on the at least one electrode and a second signal corresponding to a value of a current waveform present on the at least one electrode;
processing the first and second signals using the Goertzel algorithm to determine a phase of each of the voltage waveform and the current waveform; and
generating an output signal as a function of a phase difference between the voltage waveform and the current waveform.
15. (New) A method according to claim 14, further comprising the step of:
generating a feedback signal representative of a difference between a value of the output signal and a reference value, the feedback signal operatively coupled to the drive circuit.